ABSTRACT

An ion implanter is provided having an ion source; an AMU analyzing magnet having a fixed radius R_{am}; an ion extraction voltage source; a communication interface for monitoring implantation parameters; and an equipment server having a data log. The ion implanter further has an arithmetic processor capable of determining a real-time estimated radius R_e of a circular path of ions being implanted into a target wafer. A method of using the ion implanter provide an interlock on an AMU of each of a plurality of ions being implanted into the target wafer. The method has the step of determining in real-time if an ion implanter is implanting a desired ion into a target wafer. Also, the method determines if an absolute value of an offset between the R_{am} and R_e exceeds a predetermined radius tolerance level L and adjusts the implanter accordingly if L is exceeded.